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THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States,  
issued on the first of each month from April to November, inclusive.

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BUREAU OF ENTOMOLOGY  
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## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1925

During the past month the outstanding entomological feature was the decided advance of the season in the New England, Middle Atlantic, South Atlantic, and Gulf States, and the Mississippi and Ohio River Valleys. In New England the entomological season is about two weeks in advance of normal.

The outbreak of the army cutworm rapidly progressed in the Rocky Mountain foothills region, extending from northern Texas across western Oklahoma, Kansas, and Nebraska, and into eastern Colorado and Wyoming.

We are advised through Dr. Herrera of a terrific outbreak of grasshoppers in the States of Chiapas and Veracruz, to the southern boundary of the State of San Luis Potosi, Mex.

The chinch-bug situation on the whole remains favorable. But little damage is anticipated in the Ohio River basin and the only reports of damage are coming from northern Mississippi.

Hessian-fly emergence has so far been slight and protracted over Indiana, Illinois, Missouri, Nebraska, and North Dakota. The situation as a whole is not generally serious.

The green-bug situation is generally favorable over the entire belt.

A new pest, Tosastes cinerascens Pierce, is reported as attacking alfalfa in eastern Oregon. This is undoubtedly a native weevil turning its attention to cultivated crops.

Aphids on apples hatched considerably earlier than usual over most of New England, where they are also reported as more numerous. An abundance of aphid eggs is also reported from Minnesota, Wisconsin, and Missouri. On the other hand, Illinois anticipates but little damage from these pests, as abnormally small numbers are now present.

Codling-moth adults emerged ten days earlier than usual in central Illinois and three weeks earlier than usual at Bentonville, Ark. Similar records of early emergence are received from central Missouri.

The plum-curculio situation in the peach belt of Georgia is serious. The beetles are just putting in an appearance in the orchards of southern Illinois.

The weevil Glyptotrochus squamulata Cr., first reported as a pest in the Survey Bulletin of May, 1922 (Volume 2, No. 2, page 50), where it was reported as damaging grapes in southern Nevada, is now reported for the second time as attacking grapes this time in the Coachella Valley in southern California.

The Australian tomato weevil is gradually working its way inland from the coast counties in Mississippi and Louisiana. It now covers a strip of territory extending from Mobile County, Ala., westward along the Gulf coast to Washington and St. Tammany Counties, La., and northward to Forrest County, Miss.

The seed-corn maggot was reported during the last two weeks of the month as working in the area from Louisiana to South Carolina. It is of interest to note that this insect is known in Mississippi among the truckers as the "fertilizer worm." In previous volumes of the Survey Bulletin we have noted the association of this insect with the use of organic fertilizers in the New England and the South Atlantic States. A very similar association is noted between the presence of the cabbage maggot and seed-corn maggot and the use of fish-meal fertilizer in California.

Aphids were so numerous on spinach in the cannery sections about Sacramento, Calif., that the crop in some cases was refused at the canneries.

From observations made at the cooperative hibernation stations located throughout the cotton belt, it would appear that the survival of boll weevil is about normal from Texas eastward to Louisiana and Mississippi. In the South Atlantic States survival is generally higher than normal. The only low survival recorded is from the Tallulah, La., station. Field observations in the Brownsville section of Texas indicate that the infestation is heavy for this time of year.

In this number of the Survey Bulletin is a general survey of the camphor-scale situation.

The sheep tick is reported as being more numerous than usual in places in New Hampshire and Indiana, and a report of the apparent introduction of this pest into a locality in Texas on sheep shipped from Ohio has also been received.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR APRIL, 1925

The grasshopper outbreak in British Columbia during 1924 was one of the worst in the history of the Province, injury being done in several sections where outbreaks had not been previously reported. Widespread trouble may be expected during 1925 if the spring is hot and dry. Every precaution has been taken to cope with the situation. The grasshopper outbreak in Manitoba which originated in 1919 has been reduced to negligible proportions.

The European corn borer spread to 14 new townships in Ontario during 1924. A very marked increase in severity of infestation occurred in the southern counties, especially in Kent and Essex. The prospects for 1925 are for a continued and rapid increase throughout the infested area, because of the large acreage of corn land unploughed, and refuse unburned.

Wireworms ranked as a major pest throughout the Prairie Provinces during 1924.

Eggs of the European red mite are very abundant in the Niagara district, Ont., on plum, apple, and peach.

The codling moth is decidedly on the increase in eastern Quebec. In British Columbia light infestations have been found in hitherto uninfested localities.



An outbreak of the grapevine flea-beetle is anticipated in the Niagara district, Ont., during the coming season.

The woolly aphis is on the increase in British Columbia, where it is doing considerable damage in some sections.

The larch sawfly is becoming abundant again in the Maritime Provinces. Further injury may also be expected in the forests west and north of Lake Superior, the infestation extending across northern Alberta.

A very bad outbreak of tent caterpillars is anticipated in southern Saskatchewan and southern Alberta during 1925, with consequent serious defoliation of poplars over extensive areas. Serious trouble is also expected over wide areas in British Columbia.

There is every evidence that the outbreaks of spruce budworm which occurred in 1924 in northern Ontario, Cape Breton Island, and the Rouyn district, northern Quebec, will continue during 1925.

Serious outbreaks of the Douglas fir bark-beetle, Dendroctonus pseudotsugae Hopk., in stands of Douglas fir on Vancouver Island, and injuries to standing cedar by the western cedar borer, Trachykele blondeli Mars., are causing anxiety in British Columbia.

Every effort is being made to stamp out the infestation of the gipsy moth discovered in Quebec at Lacolle late last summer. The infestation covers an area of about one-third of a square mile.

The warble fly, Hypoderma bovis DeG., has spread in Manitoba to such an extent that very few herds are free from it in the southern and central portions of the Province.

# CEREAL AND FORAGE-CROP INSECTS

## GENERAL FEEDERS

### GRASSHOPPERS (Acridiidae)

#### Oklahoma

J. S. Pinckney (April 17): The grasshopper situation appears to be serious in the northwestern part of Jefferson and the southeastern part of Cotton Counties. Upon a rather intensive examination at the above mentioned places many eggs in hatchable condition were found. The majority of the eggs were ready to hatch and some masses were found that had already hatched.

J. R. Horton (April 18): Last year's grasshopper depredation in Comanche County, and in the vicinity of Hastings in Jefferson and Cotton Counties, Oklahoma, has thoroughly aroused the people to expect and prepare for an outbreak this year. The writer found good prospects for sporadic outbreaks in Comanche County in a few places where eggs were found at the maximum rate of 9 healthy pods per square foot. Mostly, however, healthy pods numbered 1 or 2 per square foot. Five species, or possibly genera, were recognizable in the different types of eggs and egg pods. Diseased and partly destroyed pods were fairly abundant in proportion on March 28.

#### Texas

F. L. Thomas (April 14): Damage to cotton seems to be earlier and apparently worse than last year, in 50 acres of young cotton (Brayos Co.). Millions eating cotton as fast as it comes up (Polk Co.). Reported from Milam, Freestone, Waller, Ft. Bend, and Grimes Counties.

Charles H. Gable (April 21): W. A. Baker reports grasshoppers, Melanoplus differentialis Thos., and M. ponderosus Scud., hatching in tremendous numbers in northern portion of the State where there have been rains. They have not yet begun to hatch in a large area of central Texas where they were abundant last year. The drought is so severe that the entire section is as brown and bare as in December except for trees and brush. On April 11 only a small percentage of eggs appeared injured by the drought.

#### Mexico

A. L. Herrera (April, 1925): Clipping from the daily paper "El Universal" referring to the enormous damage which the grasshoppers have caused in the States of Chiapas and Vera Cruz, also advising that the grasshoppers have already reached Tancanhuitz, San Luis Potosi, and that there is great danger of their invading the United States.

El Universal (April 1925): "The terrible grasshopper plague has eaten up everything even the roofs of the huts. Reports received yesterday with regard to grasshoppers indicate that the plague requires a far more extensive campaign than was

assumed originally. The centers of devastation are around Chiapas and Vera Cruz. The Mayor of Simojovel, Chiapas, reports that the road between this locality and the village known as New, district of Simojovel, is infested by a swarm of grasshoppers which extends over an area of 30 hectares in a mountainous section where it is very difficult to combat the pest. The Mayor of Micapa, Chiapas, states that his municipality has been invaded by a swarm of grasshoppers extending over four miles and in some settlements have left not a single plant uneaten. They have eaten up everything, even the roofs of the huts of the natives, which are thatched with forest leaves. The consternation of the natives has no precedent, and they ask for immediate help. The commissioners of the State have already started a formal campaign to check the pest. The chief of the Campeche zone reports that a swarm of grasshoppers has settled down in Hecelchhakun on a hillside in the immediate vicinity of the Blanca Flor estate, in the jurisdiction of Santa Cruz, and that measures have been taken to combat the pest there. He states that he has sent a box of grasshoppers which are infected with parasites known among the natives as "Trombilio." This shipment of infected grasshoppers is looked for with great interest, as a matter of special study,

SOUTHERN LUBBER GRASSHOPPER (Romalea microptera Beauv.)

Mississippi R. W. Harned (April 22): Mr. Eroy Thompson of the U. S. Bureau of Entomology with headquarters at Waveland, Mississippi, writes that he observed the Southern Lubber grasshopper on April 16 for the first time in 1925. In regard to these insects he writes as follows: "On the 16th when returning from Picayune, I noticed just north of Bayou Lacroix something in the road that gave the impression of miniature negro soldiers in a 'fan' formation deployed from the grass at the side of the road and after a careful examination I found them to be young nymphs of Romalea microptera. Incidentally this is my first observance of these grasshoppers for the year 1925. I noticed this formation at several places along the road for a distance of a half mile, and all of the movements were from the east to west."

MORMON CRICKET (Anabrus simplex Held.)

Wyoming C. P. Corkins (April 16): For the first time in the history of Agriculture in Fremont County, this pest has hatched out on the farm lands. Heretofore they have been a menace only on the range in the mountains. Poisoning operations are now in progress. They are not doing damage as yet.

WHITE GRUBS (Phyllophaga spp.)

Indiana J. J. Davis (April 23): During the past few months many inquiries have been received relative to white grubs. Although not a great many reports were received last year the reports now coming in, telling of conditions last year, show that this insect was quite generally destructive in the State.



- Mississippi R. W. Harned (April 22): Inspector R. B. Deen reports the first May beetles collected at Tupelo on April 13.
- Iowa C. N. Ainslie (April 23): *Phyllophaga* adults are reported in unusual numbers in this locality (Sioux City) this spring, *P. implicita* Horn being so far the most common species. *Phyllophaga* larvae are not nearly as numerous as last year.
- Missouri Haseman & Wade (April 20): The adults of the white grubs are also beginning to emerge.
- Oklahoma J. R. Horton (April 8): *Phyllophaga cribrata* Lec. has caused no commercially important damage as yet at Lawton; very slight to wheat by the grubs. In Comanche County, adults of this wingless may-beetle were already abroad at this latitude on March 24. It may be expected that attacks will occur on some of the fields of soybeans in the above mentioned county this summer.

#### CUTWORMS (Noctuidae)

- Mississippi K. L. Cockerham (April 15): There has been general complaint in southern Mississippi concerning the damage done by cutworms, probably *Agrotis* sp. This damage has been observed throughout March and April. I have heard more farmers complaining about cutworm damage this spring than for several years past. One farmer near here (Biloxi) reports that he caught over 200 one night with the aid of a flashlight.

#### PALE WESTERN CUTWORM (*Parasagrotis orthogonia* Morr.)

- New Mexico J. R. Horton (April 8): In the latter half of February of this year as compared with the same period in 1924, the worms are not abundant and the damage is slight in Quay County. The worms were in first to third instar February 24-25, this year.

#### WIREWORMS (Elateridae)

- Missouri Haseman & Wade (April 20): From this State wireworms are reported present, especially in sod land.
- California C. M. Packard (April 10): Injury to grains in the vicinity of Sacramento, Davis, and Stockton, more general and severe than usual.

#### A WIREWORM (*Limoniuss* sp.)

- Maryland E. M. Cory (April): Growers report previous damage to seed corn; poor stand in the vicinity of Accident.

#### WHEAT

#### FALSE WIREWORMS (*Eleodes* spp.)

- Kansas & Oklahoma J. R. Horton (April 17): Injury in some wheat fields in Wichita caused by army cutworm is complicated by false wireworm injury. This was found to be the case by H. E. Walkden and the



writer in Clark, Meade, Seward, and Haskell Counties, Kansas; and Woodward, Harper, and Texas Counties, Oklahoma (March 29-April 3).

CHINCH BUG (Blissus leucoconterus Say)

- Indiana J. J. Davis (April 23): No indications that this insect will be destructively abundant this coming year.
- Illinois W. P. Flint (April 23): Field examinations to date bear out hibernation records and indicate no serious damage from this insect at any point in the State from first-brood chinch bugs.
- Mississippi R. W. Harned (April 21): Under date of April 18, a complaint has been received in regard to chinch bug seriously damaging oats at Rome, in Sunflower County. On the same date a complaint was received from Drew, in Sunflower County, in regard to the damage these insects are causing to corn.
- Missouri Haseman & Wade (April 20): Chinch bugs are attracting attention in wheat, where they are mating April 15, in the western part of the State.

HESSLIAN FLY (Phytophaga destructor Say)

- Indiana J. J. Davis (April 23): First eggs were observed at LaFayette on April 11.
- Illinois W. P. Flint (April 23): Adults have been emerging at Urbana for nearly a month, but in very small numbers. It has been difficult at any time to find more than one or two eggs on infested plants, and the per cent of infested plants, or culms, has been very low at all times, never amounting to as much as 10 per cent.
- North Dakota C. N. Ainslie (April 16): Leroy Moonaw, Supt. of the Dickinson, N. Dak., Substation, sent me last week a small sack of heavily infested wheat. I dissected 400 puparia. Mr. Moonaw said that he had been looking for parasites and had found none. I thought that he must be mistaken, for I had been rearing plenty of Platygaster hiemalis during the winter from this same material. But, as you will see in the tabulation, I found one parasite in these 400 puparia. The results are as follows:

<u>Pupae</u>	<u>Larvae</u>	<u>Dead</u>	<u>Empty</u>	<u>Parasitized</u>
145	200	26	8	1

It would appear that the emergence of the fly may be slow this spring, since the larvae outnumber the puparia at present and it must take some little time to transform.

The small number of empty cases seem to show a small fall emergence, since it is almost too early for the flies to escape this spring. They are emerging freely now from this material in the warm office, but in the cool soil this would not be likely to happen yet.

The only way I can account for the lack of parasites is that Mr. Moonaw must have taken this wheat from a part of the field other than that from which I took mine in October, since from 600 puparia

from this same field I reared 178 P. hiemalis. The lone parasitic pupa I dissected out was that of a chalcid, some small species.

- Missouri Haseman & Wade (April 20): Hessian fly emerging in northwestern Missouri, April 15, though not especially abundant.
- Nebraska M. H. Srenk (March): As stated in my report for the months of January and February, 1925, forwarded on March 11, reports of infestation by the Hessian fly in wheat drilled on or after the announced date of safe sowing are practically lacking. From present indications the counties most heavily infested at this time are Seward and Fillmore. A survey made in the western part of Seward County showed no infestation in the drilled wheat plants in fields sown after the date of safe sowing, but in volunteer plants infestations of an average of from one to nineteen puparia per plant were found in different fields. In Fillmore County the county agent reports that the volunteer wheat and the wheat sown early, before the announced date of safe sowing, is at this time heavily infested with the Hessian fly. Conditions in the State as a whole, however, are better than they have been at any time in the past few years.
- California C. M. Packard (April 10): Reported attacking wheat in the San Francisco Bay region, damage being less than normal.

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

- Nebraska M. H. Srenk (April 9): The infestation since I wrote you last has developed the most severely in southern Keith and nearly all of Perkins Counties. Don B. Whelan, of this office, has been working in the field there since April 1. The weather has been cool, rainy, and windy, so that the cutworms have not been feeding as heavily as they began doing late in March. Some farmers think they are through with their work, but the size of the cutworms indicates that this is not the case. Demonstrations are being given on the use of the poisoned bran bait, and six thousand copies of a circular about this insect have been distributed among the farmers in the infested counties. In other words, the situation is well in hand.
- Kansas J. R. Horton and H. H. Walkden (April 7): Most intensive period in outbreak March 2 to 20. Plants cropped off to or slightly below surface of ground, completely denuding large areas. Observed in Sedgwick, Sumner, Pratt, Barber, Clark, Meade, Seward, Haskell, Stafford, and Reno Counties. Reported from Harper, Kingman, Kiowa, Comanche, and Russell Counties.
- Oklahoma J. R. Horton and H. H. Walkden (April 7): Reported from Major, Ellis, Woods, Woodward, Harper, Comanche, and Texas Counties.
- Colorado C. F. Gillette (March 31): Inquiries are being received concerning a cutworm that is doing great damage to winter wheat. In most instances the worms are marching across the fields, either from stubble land or other locations where the eggs were deposited and

the worms hatched in large numbers last summer. Thousands of acres of grain have already been apparently destroyed by them. Eight localities calling for help in the past four days are Julesburg, Holyoke, Haxtum, Amherst, Akron, Yuma, Wray, and Burlington. Have sent a man to investigate and advise control measures.

Wyoming

C. P. Corkins (April 20): A minor outbreak of the army cutworm has occurred in Goshen County, where control measures have been practiced in a few fields. In the laboratory these worms are already pupating abundantly. Attacking winter wheat, barley.

GREEN BUG (*Toxotera graminum* Rond.)

South  
Carolina

P. Luginbill (April 13): At Columbia the infestation is general, and apparently slight. Enemies, ladybeetles and syrphids, at work. No serious damage expected. Oats heading out.

Texas

Charles H. Gable (April 22): The green-bug situation in northern Texas is unchanged. W. A. Baker failed to find any specimens during a recent trip through the northern counties.

New Mexico

Paul M. Gilmer (April 8): Infestation of green bug in some wheat fields at State College. The damage on the whole has not been serious but in a few fields has reached as high as twenty-five to fifty per cent. The outbreak apparently is now under control by natural agencies.

CORN

POTATO FLEA-BEETLE (*Epitrix cucumeris* Harr.)

North  
Carolina

W. A. Thomas (April 9): This insect is now doing some damage to early corn at Chadbourn, some of the plants being killed outright. Most of this corn has been checked in its growth by the cool weather of the past three weeks. At the present time the corn attacked is about two inches high and growing very little.

EUROPEAN CORN BORER (*Pyrausta nubilalis* Huebn.)

New York

Monthly Letter Bureau of Entomology, No. 131 (March): L. H. Northley is conducting a clean-up campaign against the European corn borer in western Long Island and eastern Staten Island, where isolated colonies of the insect have been discovered. The methods followed consist principally in burning over the infested areas by the use of specially designed burners and fuel oil. Good progress has been made in this work, as the weather has been very favorable.

ARMYWORM (*Cirphis univincta* Harr.)

South  
Carolina

P. Luginbill and T. C. Shiver (April 13): Larvae still small, none over half grown. Field was in alfalfa several years ago. Larvae not as numerous now as a week ago at Columbia. No serious outbreak expected at this time.



Illinois

W. P. Flint (April 23): Armyworm moths taken first time in 1925 on the night of April 2, at Carbondale, according to S. C. Chandler.

ALFALFA

GARDEN WEBWORM (Loxostege similalis Guen.)

Kansas &  
Oklahoma

J. R. Horton (April 7): A moderate sized flight of these moths was under way during the last two weeks of March, from south-central Kansas to south-central Oklahoma.

A WEEVIL (Tosastes cinerascens Pierce)

Oregon

Don C. Mote (April 13): Adults of above weevil reported to be doing damage to old stand of alfalfa at Pendleton.

CLOVER

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Indiana

J. J. Davis (April 23): Have noticed this insect working on clover for some weeks here at Lafayette, although no damage. Today I received specimens from Aurora, in the southeastern corner of the State, with the report that they are working on alfalfa and that the field these specimens came from is practically destroyed in patches where they are working the heaviest. The owner states that they were much more numerous a week ago than now. The specimens received were mostly full-grown larvae, with a few pupae and an occasional one-third grown larva.

GRASS

GRUBS (Cyclocerhala sp.)

Illinois

W. P. Flint (April 23): As was expected, following the unusually heavy flight of adults of this species last season, injury by grubs is now being reported in east-central Illinois. Thus far, all injury reported has been to blue grass in lawns.

SORGHUM MIDGE (Uontarinia sorghicola Coq.)

Texas

Charles E. Goble (April 21): Because of drought practically no grain sorghum has yet been planted, although it is now seven weeks later than the usual earliest planting period. Sorghum midge made its appearance in normal numbers on Johnson grass in San Antonio on April 8, as against April 27 last year.

F R U I T I N S E C T S

MISCELLANEOUS PREDATORS

COMMON RED SPIDER (Tetranychus telarius L.)

California

F. R. Brann (April 18): Serious injury done to peaches, prunes,



and apricots in Tulare County from May 10 to November 1, 1924; \$150,000 is spent annually in control measures, spraying, and dusting.

EUROPEAN TUSSOCK MOTH (Notolophus antiqua L.)

Kansas H. B. Hunnerford (March 3): At Topeka one batch of eggs was found in a shipment of 75,000 Mahaleb seedlings from Algeria, France, by R. H. Beamer. These eggs were determined by Dr. H. G. Dyar as the European tussock moth.

APPLE

APHIDIDAE

Massachusetts A. I. Bourne (April 25): Aphids began hatching on apples, and were also noted on plums, as early as March 26, which is the earliest record we have had since 1921 for the hatching of aphids on apple. In regard to the apple aphids I would say that reports from all sections of the State announce that they are more abundant-- in some cases to a very marked extent -- than is normally the case. From specimens we have observed there are all three species: the green apple aphid, the apple-grain aphid, and the rosy apple aphid. Many of the orchardists noticed that these aphids hatched so early in relation to the opening of the buds that their dormant sprays, particularly where they used oils, caused a much better control than they were able normally to secure.

Rhode Island A. E. Stone (April 17): At Kingston plant-lice are at this time showing up in unusually large numbers on the opening buds.

Connecticut M. P. Zappe (April 1): Most of the aphids have hatched and are all clustered on fruit buds and a few on twigs. The species are mostly pomi but a few sorbi are mixed in. The abundance is perhaps a little more than average. The season is very early. (April 13): Aphids are scattering to leaf buds. Adalia bipunctata and syrphid eggs are hatching and are quite plentiful in Hamden and Milford.

Philip Garman (April 24): Severe outbreak threatens the fruit growing industry in this State. Species involved are Aphis pomi, A. sorbi, and R. prunifoliae. Rosy aphid present in most orchards of New Haven County.

Illinois W. F. Flint (April 23): Rosy aphid very scarce in orchards in west-central and southern Illinois on April 22. Apparently there will be little injury by this species during the present season. The oat aphid which was abundant earlier in the year has now migrated so that it is difficult to find it.

Minnesota A. G. Ruggles (April 14): The eggs of plant-lice are extremely abundant, particularly on apple; the exact species has not yet been worked out. The indications are that aphids of all kinds will be very abundant this spring. At the date of writing no insects have been found in the field.

GREEN APPLE APHID (Aphis pomi DeG.)

- New Hampshire P. R. Lowry (April 24): At Durham tiny stem-mothers are clustered on the bursting apple buds. Infestation is scattered, but the aphids are common on a few trees.
- Missouri L. Haseman and Mr. Wade (April 20): Green apple aphids and apple oat louse are particularly abundant in the central part of the State.
- Oregon Don C. Mite (March 18): Exceedingly light infestation at Monroe.

APPLE-GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

- Wisconsin S. B. Fracker (April): Aphids hatching about April 1. They are very abundant at Gays Mills and Madison.
- Missouri L. Haseman (April 9): A drop in temperature late in March, following a period of warm weather, has almost completely wiped out the young grain aphids in southwestern Missouri.

ROSY APPLE APHID (Anuraphis roseus Baker)

- Oregon Don C. Mite (March 18): Light infestation at Monroe. Examination of eggs indicates only about 10 per cent have hatched out to date.
- B. G. Thomson (April 13): At Corvallis eggs of rosy apple aphid and green apple aphid are all hatched at this date.

CODLING MOTH (Carpocapsa pomonella L.)

- Illinois W. P. Flint (April 23): First adults of codling moth emerged in breeding cages at Carbondale on April 21, according to S. C. Chandler. Pupation had occurred 10 days earlier at Jacksonville and Urbana. Apparently the adults will be out about the time of the full bloom of the apple in central Illinois this season, which would mean that young larvae will be hatching in this section a little earlier than usual. The season has been hot and dry throughout the apple districts.
- Arkansas A. J. Ackerman (April 19): An interesting item from the Bentonville section is that about 5 per cent of the codling moth adults have emerged in the insectary by April 19, which is fully three weeks earlier than during a normal season. Grovers are just completing the "petal-fall" spray on apple; this spray application should therefore be of value not only for calyx worms but as a cover spray for early hatching larvae.
- Missouri L. Haseman and Mr. Wade (April): The colling moth was pupating in central Missouri on April 21.

FRUIT-TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

New Mexico Paul M. Gilmer (April 8): In San Juan County an outbreak of the apple leaf-roller of serious proportions is reported. I believe the situation serious enough in the fruit-growing sections of San Juan and Colfax Counties to warrant a thorough investigation.

BUDWORM MOTH (Tmetocera ocellana D. & S.)

Massachusetts A. I. Bourne (April 25): The bud moth work is making itself apparent as the apple buds are beginning to unfold and develop. Indications point to about the usual abundance of this pest.

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts A. I. Bourne (April 25): The apple tent caterpillars continue to be abundant in all sections of the State. The young began hatching here at Amherst on April 8 and 9, which was approximately 12 to 14 days earlier than the date on which they began to hatch a year ago. I find that throughout the State, as a whole, they are hatching much earlier than they did last year, and by about the same number of days as above.

Connecticut M. P. Zappe (April 18): First egg masses hatched April 2. They have all hatched now, and webs begin to be noticeable. There are more in the southern half of the State than in the northern. On wild cherry and apple.

Illinois W. P. Flint (April 23): This insect has been very abundant in a few southern Illinois counties, occurring mainly south of a line drawn through Randolph, Perry, Hamilton, and White Counties. The insects have appeared earlier than usual and 90 per cent are now in the stage of mature larvae. Damage to commercial orchards has been very slight, but wild cherry, wild plum, and haws have been completely defoliated in many cases. In a few instances nests have been noted in peach orchards.

LEOPARD MOTH (Zeuzera pyrina L.)

Pennsylvania H. E. Hodgkiss (April 29): Found a single leopard-moth larva in an apple orchard near Media in Delaware County. This was the only specimen found during pruning operations and it damaged a side branch so badly that it broke off. This is the first case of the leopard moth in Delaware County as far as my records show.

SPRING CANKERMOTH (Paleacrita vernata Peck)

Missouri E. Haseman and Mr. Wade (April 21): Cankerworms are attracting attention in some places.

TARNISHED PLANT-BUG (Lyrus pratensis L.)

Massachusetts A. I. Bourne (April 25): These bugs have been taken in unusually large numbers from early flowers and blossoms in the region directly around Amherst. The increase in abundance is so marked that we are planning to keep very close watch on this insect



during the coming months, when field and garden crops begin to appear.

Connecticut M. P. Zappe (April): Quite a number of adults present at Washington and Middlefield, and all beginning to feed on opening leaves of apple.

APPLE LEAFHOPPER (Empoasca mali LeB.)

Missouri L. Haseman (April 9): We may expect unusual damage from this pest in southwestern Missouri. It is ordinarily troublesome in the fall, but it has never been so abundant in the spring as it is this year.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Indiana J. J. Davis (April 23): This insect is prevalent and destructive throughout the northern half of the State, as evidenced by the number of inquiries and examples received. At Auburn during the past winter the writer observed a young orchard which was severely injured by this insect.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts A. I. Bourne (April 25): We still continue to receive complaints of increasing abundance of San Jose scale in orchards here and there throughout the State. This can be attributed largely to the fact that many growers have enjoyed more or less immunity from this pest for so many years that they have neglected to apply the dormant sprays. In large commercial orchards, however, we did not find this scale to be at all noticeable.

Wisconsin S. B. Frecker (August, 1924): Winter mortality apparently 100 per cent at LaCrosse. Apparently eradicated there by spraying last year on all hosts except Sorbaria sorbifoliae and winter killings seems to have completed the work.

Missouri L. Haseman and Mr. Wade (April 20): The scale situation in the orchards of Missouri this spring is under better control than for the last several years. Considerable delayed-dormant spraying was done for the scale this year.

Oregon Don C. Mote (March 13): It is difficult to find an orchard in the Willamette Valley with a sufficient number of infested trees for San Jose spray tests.

SCURFY SCALE (Chionaspis furfura Fitch)

Nebraska M. H. Srenk (March): In the month of March there were several complaints of an abundance of the scurfy scale in apple orchards in the northeastern part of the State.

FRUIT-TREE LEAF SYNETA (Syneta albida Lec.)

Oregon B. G. Thomson (April 13): Attacking apples, cherries, and



filberts in the Willamette Valley. They are more numerous and over a larger area.

Don C. Mote (March): at Corvallis 60 were collected in 20 minutes. (March 26): Upon shaking trees beetles dropped by the hundreds. Infesting larger block of apple and cherry trees in orchard than they did last year.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts A. I. Bourne (April 25): Over the State as a whole, the European red mite does not seem to be generally as abundant as last year, as evidenced by the overwintering eggs. In certain orchards in Bristol County, however, they are still to be found in very considerable abundance. The general practice of using the oil sprays in the dormant season, which gained considerable headway last year and is even more widespread now, seems to promise to reduce this threatening pest to a point of only moderate abundance.

Connecticut Philip Garman (April 24): In New Haven and Fairfield Counties mites are about the same as last year.

PEAR

PEAR THRIPS (Taeniothrips inconsequens Uzel)

Oregon Don C. Mote (March 31): A grower brought several branches of blossoms to the laboratory and reported about one-third of his 15-acre orchard infested. Each blossom was infested with at least 3 thrips. (April 20): No further developments, probably because of the cool, rainy weather following the above report.

PEAR PSYLLA (Psylla pyricola Foerst.)

Massachusetts A. I. Bourne (April 25): Found in the college orchards to be out in numbers the first few days of April, and eggs in plenty could be found. This is approximately two to three weeks earlier than the corresponding appearance of these insects last year, when the first eggs were to be found about April 25.

Connecticut M. P. Zappe (April 17): Adults are common on twigs and are beginning to oviposit at Deep River, Hamden, and Milford.

Philip Garman (April 24): Eggs are numerous in several orchards in New Haven and Hartford Counties.

BLOSSOM ANOMALA (Anomala undulata Mels.)

Mississippi R. W. Harned (April 10): Anomala undulata was reported as eating the young buds from pear trees at night at Columbia on March 21. The beetles sent in were determined by J. M. Langston.

PEACH

GREEN PEACH APHID (Myzus persicae Sulz.)

California A. E. Bottel (April 14): Complaints from various points in the

western part of Riverside County. Damage is severe.

PEACH BORER (Aegeria exitiosa Say)

Georgia

O. I. Snapp (April 14): Results from the general use of paradichlorobenzene last fall in the Georgia peach belt have been uniformly excellent. Again injury has resulted from the use of paradichlorobenzene in one,- two,- and three-year-old experimental orchards. Four years is the minimum age limit for the use of paradichlorobenzene with safety in this latitude. Some few growers who were unable to apply the material last fall are making spring applications.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Mississippi

R. W. Harned (April 21): The fruit-tree barkbeetle and other bark-beetles are apparently causing more damage in the State this year than for several years, probably owing in part at least to the unprecedented drouth of last summer. Trees of all kinds throughout the State were seriously injured by this drouth.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

Oliver I. Snapp (April 14): On account of a large curculio population in the orchards last fall, as a result of a part of the 1924 peach crop left in the orchards when the condition of the markets was unsatisfactory, and on account of the low mortality of the adults in hibernation during the mild winter, the infestation in middle Georgia peach orchards is heavy at the present time. This is indicated by the many "stung" peaches, and the large numbers of adults that are being caught by jarring. In one orchard over 1,000 beetles were caught from sun-up to 8.00 a. m. One grower reports a catch of 500 curculios in one morning with one set of frames. The number of adults that survived the winter is greater than it has been for four years. The percentages of winter survival of adult curculios in various hibernating conditions follow:

Bermuda Grass	- 74.3	Pine needles	- 56.4
Cak leaves	- 35.9	Bare ground	- 12.4

Monthly Letter, Bureau of Entomology, No. 131 (March): For several months O. I. Snapp, of the Fort Valley laboratory, in cooperation with B. R. Coad and E. Johnson, of the Tallulah, La., boll weevil laboratory, has been giving attention to the perfection of the technique for using airplanes in dusting peach trees at Fort Valley. This work has involved the adjustment of the feeding mechanism of the planes so that they could evenly distribute the heavy dust used on peach. O. I. Snapp reports that the first airplane dusting of a commercial peach orchard for the control of an insect pest took place at Montezuma, Ga., March 23, when, in one hour and fifty-five minutes, 10,000 peach trees were dusted with a mixture of arsenate of lead and hydrated lime. The recorded time included that spent in making

trips to the landing field to refill the hopper, etc. A thousand acres of peach trees will be treated during the season by airplane in Georgia under the supervision of the Fort Valley laboratory of the Bureau, in order to obtain data on the results, cost of operation, etc.

Illinois

W. P. Flint (April 23): S. C. Chandler took first adults of the plum curculion on peach trees in Jackson County on April 20. Many trees had been jarred at two- or three-day intervals for some time previously. Peaches, apples, and cherries in orchards in Jackson and Union Counties showed eggs of this insect in moderate numbers on April 22. Very small number of young larvae present at this time.

ORIENTAL FRUIT MOTH (Laspéyresia molesta Busck)

GENERAL

Monthly Letter, Bureau of Entomology, No. 131 (March): The activity of the oriental peach moth has been resumed in the South. The first spring pupation took place on February 25 and the first adult emerged on March 8.

Georgia

C. I. Shapp and assistants (April 14): Oriental peach moth larvae are now being found in twigs in commercial peach orchards. A first-generation adult was also captured today in a commercial orchard. First-generation adults have been emerging in the insectary since March 8.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

C. I. Shapp (April 14): Because of the continuous mild weather, San Jose scale mortality from climatic conditions was very low in middle Georgia during the past winter. At Fort Valley the minimum temperature for the winter was 21°. Spring weather conditions have been excellent for scale reproduction, the maximum temperature being on many days around 85°. Recent observations reveal a rapid increase in the infestation in many orchards. Results from the use of lubricating-oil emulsion during the winter have been generally good, however, experiments showing that in this latitude one application of a 3 per cent emulsion, or two applications of a 2 per cent emulsion, are required for satisfactory control of a heavy infestation on peach trees.

PLUM

MEALY PLUM APHID (Hyalopterus arundinis Fab.)

California

T. D. Urbahns (April 20): This aphid is developing very rapidly and threatens to cause considerable damage. The prune orchards of San Joaquin and Sacramento are probably most heavily infested, while many reports also are received from other adjoining counties. Sycphid flies are abundant.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi

R. W. Harned (April 10): The rusty brown aphid has been reported as occurring in large numbers on plum trees in different parts of the State. (April 21): The southern plum aphid, or rusty plum aphid, is, as usual, abundant throughout Mississippi at the present time. Specimens and complaints have been received from



Copiah, Carroll, Jefferson, Lauderdale, Stone, and Sunflower Counties.

GRAPE

GRAPE FLEA-BEETLE (Haltica chalybea Ill.)

- Connecticut M. P. Zappe (April 17): Beetles are mating and are mostly on main trunks of vines at base of side branches. Beetles are eating holes into buds at Hamden. This is the first outbreak since 1911.
- Mississippi K. L. Cockerham (April 18): The first of these beetles found feeding heavily upon grape and scuppernon vines at Biloxi; some larvae practically grown and the leaves showing rather severe damage. Arsenate of lead applied as a control measure. The reporter did not see the insect doing any damage in this locality during the past few years.
- R. W. Harned (April 21): W. L. Gray, Inspector, with headquarters at Natchez, reports on April 17 that flea-beetle larvae are causing damage to grapes in Adams County. The specimens he sent have been identified by J. M. Langston as probably Haltica chalybea. (April 22): Under date of April 20 Inspector R. C. Price at Poplarville sent grape leaves collected from four different properties that were quite seriously injured by the larvae of what we take to be the grape flea-beetle. These insects are attacking both the muscadine and bunch grapes. They have appeared in that section of the State in large enough numbers to do considerable damage.
- Arizona Arizona News Letter, Vol. 3, No. 3 (March 31): During the early part of the past growing season many grape plantings in the Salt River Valley were more or less severely injured by the grapevine flea-beetle. In the Salt River Valley the beetles make their appearance when the vines have made a growth of from 1 to 3 feet. The beetles appear in great numbers and at once start feeding on the buds and tender growth. The leaves are striped, leaving only the skeleton attached to the vine. The most serious damage is done to the growing buds and terminal shoots. This damage, however, is likely to escape the notice of the grower, who sees only the more noticeable injury to the larger leaves.

CUTWORMS (Noctuidae)

- Missouri L. Haseman (April 9): At Neosho severe damage is reported in several vineyards.

GRAPE SCALE (Aspidiotus uvae Comst.)

- Virginia W. M. Davidson (April 2): This scale has occasioned considerable damage in the vineyard at the Insecticide and Fungicide Board's laboratory at Vienna. While the scale has been present for many



years in the vineyard it appears to be on the increase at this time. A noticeable parasitism is present.

A WEEVIL (Glyptoscelis squamulata Cr.)

California

A. E. Böttel (April 14): Determined by Dr. E. C. Van Dyke as a chrysomelid, Glyptoscelis squamulata. Attacking grapes in the Coachella Valley, Riverside County.

CURRENT

CURRENT APHID (Myzus ribis L.)

Connecticut

W. E. Britton (April 24): Already forming blisters on partly grown leaves at New Haven.

CURRENT BORER (Synanthedon tipuliformis L.)

Wyoming

C. P. Corkins (April 24): Specimens of a currant borer (probably the imported) have been received from the county agent at Afton. The amount of damage is unknown.

GOOSEBERRY

BLACK GOOSEBERRY BORER (Xylocrius azassizi Lec.)

Oregon

Don C. Mote (March 20): First adult found on gooseberry cane at Salem.

GOOSEBERRY MIDGE (Dasyneura grossulariae Fitch)

Oregon

Don C. Mote (March 20): First-generation adults almost disappeared at Salem. Observed 4 adults in 3 hours.

PECAN

PECAN COSSID (Cossula magnifica Stkr.)

North Carolina

F. Sherman (March 31): The striking borer is of regular occurrence in oak and pecan, but is not often reported; two reports thus far this year.

CRANBERRY

YELLOW-HEADED FIREWORM (Peronea minuta Rob.)

Massachusetts

A. I. Bourne (April 25): Mr. Lacroix, from the Cranberry Substation, reports observing overwintering adults of the yellow-headed fireworm flying in abundance on bogs in Plymouth County on April 15, and notes egg laying in full swing. This, he states, is fully two weeks ahead of the usual procedure.

CITRUS AND SUBTROPICAL FRUITS

THREE-LINED FIG BORER (Ptycholes trilineatus L.)

Mississippi R. W. Harned (April 10): This insect seems to be gradually on the increase in the State, and it has now been recorded from the three coast counties. In the spring of 1923 adults of this species were reared from fig trees collected at Ocean Springs on October 9, 1922. In March, 1925, Trsy Thompson, of the U. S. Bureau of Entomology, found the larvae of what is supposed to be this species causing considerable damage to fig trees at Bay St. Louis, and Mr. Kimble Harman, of the Bureau of Plant Industry, found the same insects at work on fig trees in Gulfport.

ROVE-BEETLE (Staphylinidae)

Arizona Arizona News Letter, Vol. 3 No. 3, (March 31): A species of rove-beetle was observed to be very numerous in citrus blossoms on young trees near Scottsdale. Many of the flowers presented a black appearance in the center, because of the great abundance of these insects.

GRAY CITRUS SCALE (Coccus citricola Camp.)

California E. R. Brann (April 18): Injury in Tulare County from February 1 to December 1; \$235,000 spent annually in control measures, spraying, and fumigation.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

California T. D. Urbahns (March 31): Citrus trees along streets and in parks in Sacramento were inspected in company with R. S. Joglum for whitefly. Hibernating stages indicate that it will be at least two weeks before adults appear.

OLIVER FRUIT-FLY (Dacus oleae Rossi)

Palestine California Weekly News Letter, Vol. 7, No. 3 (April 18): The olive fruit-fly is a common pest in all parts of Palestine and, together with the tree-boring caterpillars of the leopard moth, it is the primary reason for the poor oil crops of the olive industry there, according to a circular issued in January by the Institute of Agriculture and Natural History of Palestine.

This circular states that the olive fruit-fly in Palestine produces six generations annually in the coastal-plain region and five generations in the mountains. The greatest infestation takes place in the coastal plain areas and the luscious varieties containing the largest amount of oil suffer most. Despite some expressions in scientific literature that indigenous olive trees in Palestine and Egypt will not be attacked by Dacus oleae, this pest has been found on eight of the eleven olive varieties indigenous in Palestine. The reason that the remaining three varieties have to be considered up to date free of Dacus oleae is probably owing only to lack of thorough search.

The damage may be estimated at 20 to 40 per cent in the lesser and 40 to 90 per cent in the more frequently attacked olive varieties.

The biological method of control does not seem to be very promising. Parasites are apparently at their height in August and then decrease rapidly, whereas the olive fruit-fly develops from September onward two or three further generations. Spraying is recommended, four such sprayings being necessary in the coastal-plain region during the summer months.

## TRUCK - CROP INSECTS

### GENERAL FEEDERS

#### CUTWORMS (Noctuidae)

- Alabama N. F. Howard (March 27): Cutworms, species undetermined, but probably Peridroma, reported as severely injuring tomato plants shortly after setting in the field.
- Mississippi M. M. High (March 28): Cutworms, Agrotis ypsilon, Feltia sp. and Peridroma saucia, were found rather abundant in southern Mississippi last month injuring truck.
- R. W. Harned (April 10): Cutworms have been reported as causing considerable damage in the southwestern part of Mississippi during the past month. Most of these complaints have come from Hinds, Copiah, and Lincoln Counties, but some have come from other counties. The tomato crop has been reported as seriously injured by these insects. Several dozen cutworms received from Inspector H. H. Wedgworth of the State Plant Board at Raymond have been tentatively identified by Mr. H. W. Allen as Feltia ducens.
- Arizona Arizona News Letter, Vol. 3 No. 3 (March 31): Cutworms were observed doing damage to early tomato plants near the Phoenix Indiana School. A report of cutworm injury was also received from the office of the country agricultural agent of Maricopa County.

#### AUSTRALIAN TOMATO WEEVIL (Desiantha nociva Lea)

- Mississippi M. M. High (March 28): The Australian tomato weevil is gradually working its way inland from the coast counties in this State, having been found recently in abundance at Picayune, Poplarville, and Hattiesburg. We have not as yet been able to find this weevil in the trucking section about Crystal Springs, but it appears likely that it will reach this section during this season.
- Louisiana M. M. High (April 2): The Australian tomato weevil during the past week has been found at the following points in Louisiana: Slidell, Covington, Bogalusa, Onvil, Bush, and intermediate



points. It was also found abundant on the Mississippi side of Pearl River opposite Bogalusa, La., south to Nicholson, Miss. In Mississippi it has been found 6 miles north of Hattiesburg or 80 miles from the Coast north. Very young larvae were found about Hattiesburg, indicating that emergence in this region will be several weeks behind that on the coast.

WESTERN TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon

Don C. Mote (March 20): Reported from Corvallis on this date, observed scatteringly on willows and other vegetation.

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Illinois

W. P. Flint (April 23): Seen on April 19; two adults of this species observed during the present season to date.

SEED-CORN MAGGOT (Hyalemyia cilicrura Rond.)

South Carolina Philip Luginbill (April 15): Reported attacking garden beans at Columbia, damage being slight.

Mississippi

R. W. Harned (April 10): H. H. Wedgworth, Inspector at Raymond, Miss., on April 8 wrote as follows: "This year the truckers of the Crystal Springs section are losing a small percentage of the English pea crop from a stem-rot (some fields are losing heavily, up to 80 or 90 per cent). This stem-rot is caused by a fungus, Pythium, but in examining the roots of these peas and more especially the old peas that were planted, I have found that it is mined by small maggots. Beans are also affected the same way. The truckers believe the stem-rot is the cause of the trouble, and not knowing what this maggot is doing, or how it got to the pea, I am at a loss for an explanation. I have been unable to find the maggots in any quantity, but am going to send you a few of the peas or beans for examination. The maggot is called the Fertilizer worm 'by the truckers.' The larvae that accompanied this report from Mr. Wedgworth were tentatively identified by J. M. Langston as the seed-corn maggot, Phorbia fusciceps Zett. There seems to be a slight question of doubt as to whether the fungus is the entire cause of the injury to the pea plants. There is a bare possibility that part of this injury may be due to the maggots.

Louisiana

Chas. E. Smith (April 30): This fly larva attacks the seed soon after sprouts are sent out and the attack continues until the plants are a week old or more. The first infestation was noted near Sharp Station, about 7 miles east of Baton Rouge, March 30, 1925, by the writer. Mr. Normal Allen found the same larva, apparently, doing severe injury to cantaloupes at Kenner, April 3. Since that time several other observations have been made in the vicinity of Baton Rouge, and one report was received from Zachary, where the grower reported that three plantings had failed to produce a stand, and that he found a maggot working in the sprouted seed and young plants.



California

R. R. McLean (April 15): Seed-corn-maggots (Phorbia fusciceps Zett.) unusually active this spring in San Diego County, also destroying bean, corn, melon, and cucumber seed. Other maggots have destroyed a number of acres of tomatoes, tunneling up the stems of plants several inches high. The excessive amount of injury is probably due to a succession of dry winters, large numbers of overwintering forms in the soil being able to survive.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

California

R. R. McLean (April 15): Maggots found in cauliflower heads badly infested in San Diego County. Some 100 acres infested. Species not yet determined but probably the western radish maggot or some related species, such as the cabbage maggot, Phorbia plautipilis Stein and P. brassicae Bouche. Attacks possibly induced by successive plantings of cauliflowers and the use of fish meal as a fertilizer, this seeming to attract adult flies.

MOLE CRICKET (Gryllotalpa borealis Burm.)

South Carolina

Philip Luginbill (April 16): Mr. T. B. Malphrus wrote as follows: "We have an insect that runs under the dirt and damages the little plants. Some people call them the English ground mole. They are about one inch long and run about one-half inch under the dirt and make a little trail like a ground mole." This is evidently the mole cricket.

POTATO

GRANULATE CUTWORM (Feltia annexa Treit.)

Mississippi

R. W. Harned (April 10): Inspector H. Gladney of Ocean Springs sent in 28 cutworms that were collected around Irish potatoes on March 21. These specimens have been determined by Mr. H. W. Allen as the granulate cutworm. Mr. Gladney wrote: "As many as 12 cutworms were found around some of the potatoes. The plants are about 4 inches high."

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida

F. S. Chamberlin (April 1): Potato foliage is being slightly damaged by this pest in Gadsden County.

BROWN STINK-BUG (Euschistus servus Say)

Florida

F. S. Chamberlin (April 8): In Gadsden County the potato foliage is being slightly damaged by this bug.

POTATO BEETLE (Leptinotarsa decemlineata Say)

North Carolina

W. A. Thomas (April 8): This insect has shown up in unusual numbers in many of the potato fields at Chadburn and is rapidly depositing eggs on the young foliage. The plants will now average about 3 inches in height and are growing rapidly.

Florida

F. S. Chamberlin (April 10): The first beetles of the season were observed in a potato field today in Gadsden County. Dust applications for the control of this pest will commence next week.

W. H. White (April 28): Specimens of the Colorado potato beetle were sent to the office by B. L. Boyden with the information that Mr. Barney Taylor of Baker County brought the specimens into the laboratory at Macclenny, Fla., stating that they were doing considerable damage to his Irish potatoes. Mr. Boyden says: "This is the first complaint I have heard in Baker County during our seven years there of damage done by the potato beetle. These also are the first specimens I have seen in Florida."

Mississippi

M. M. High (March 28): The Colorado potato beetle has appeared in small numbers on potatoes about Bay St. Louis and Poplarville.

SWEET POTATO

TORTOISE BEETLES (Cassidinae)

Mississippi

J. M. Langston (April 23): Four species of tortoise beetles; Chelymorpha cassidea Fab., Chirida guttata Oliv., Metriorhiza bivittata Say, and M. bicolor Fab., have appeared on recently-set sweet-potato plants on the college farm. Eggs are being deposited by all the species. So far the injury is slight and will probably not become serious.

R. W. Harned (April 21): The argus tortoise beetle was found feeding on sweet potato plants at Laurel on April 16 by Inspector N. D. Peets.

CABBAGE

APHIDIDAE

Mississippi

R. W. Harned (April 22): Inspector R. B. Deen on April 21, 1925, reports that plant-lice are appearing in large numbers on cabbage, plum, and other plants in Lee and Pontotoc Counties.

VARIEGATED CUTWORM (Peridroma margaritosa Haw.)

Alabama

N. F. Howard (March 27): This cutworm is doing severe damage to early cabbage plants on one farm. No counts were made, but it is estimated that 75 per cent of the plants were destroyed. One specimen of another species of cutworm was taken.

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Alabama

N. F. Howard (March 24): Abundant on one small field of early cabbage and doing considerable injury, probably 15 per cent of the crop being seriously set back.

Mississippi

M. M. High (March 28): The harlequin cabbage bug was found injuring cruciferous crops in southern and central Mississippi.

R. W. Harned (April 10): On March 26 a correspondent at Auter, Sharkey County, sent in a number of adults of the harlequin cabbage bug, as well as a number of egg masses. These insects were reported as already very abundant this year on cabbage, "turnips, collards, potatoes, and everything else growing in the garden." On the same date another correspondent at Fruitland Park, Forest County, wrote: "These bugs are getting quite thick on cabbage plants and growing cabbage." (April 22): Inspector R. B. Deen reports the harlequin cabbage bug in gardens at Tupelo and Guntown in Lee County on April 21.

CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi

M. M. High (March 28): The cabbage webworm has been present in some numbers all winter in southern Mississippi, and the moths are now emerging at a rapid rate in the insectary. In this State this is one of the most serious pests that cruciferous crops have, for it is present during most of the growing season.

IMPORTED CABBAGEWORM (Pontia rapae L.)

North Carolina

F. Sherman (March 31): Adults were seen in flight at Raleigh in late February and at any time since then when the weather was warm.

Indiana

H. F. Dietz (April 23): Large numbers of this butterfly were on the wing at Indianapolis April 12. Clusters of six and eight together were frequent. Apple (variety Wealthy) and Cydonia japonica were just beginning to bloom.

Illinois

W. P. Flint (April 23): More numerous than usual in central Illinois.

Alabama

N. F. Howard (March 27): One grower reports having observed adults during the last week.

Mississippi

R. W. Harned (April 22): Inspector R. B. Deen at Tupelo, under date of April 21, reports that he has found cabbage worms doing damage at several places in the vicinity of Tupelo. Under date of April 17 Inspector George E. Riley at Corinth reports that no cabbage worms have been noticed, but that the adult butterflies are very numerous and can be seen in every garden. He has observed them for the last three weeks in the four counties in his territory, Tishomingo, Alcorn, Prentiss, and Tippah.

Oregon

H. A. Scullen (April 5): At Corvallis on this date adults were observed.

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Mississippi

R. W. Harned (April 10): Larvae identified as this species by Mr. J. M. Langston were received from Fayette, Miss., where



it was reported as causing some damage to strawberry plants on March 23.

Wyoming

C. L. Corkins (April 24): Moths of this insect reported by county agent Sheeley as being exceedingly abundant on strawberry beds at Basin. The species is probably Ancylis comtana.

STRAWBERRY CROWN-BORER (Tyloclerma fragariae Riley)

Missouri

L. Haseman (April 8): The adults have emerged and are feeding to some extent in the south-western part of this State. Oviposition has also started. Indications are that the pest will cause considerable damage due to delayed planting of new beds.

STRAWBERRY CROWN MOTH (Synanthedon rutilans Hy. Edw.)

Oregon

B. G. Thomson (March 21): In the Willamette Valley this insect is attacking strawberry plants, having survived the winter, and prospects are favorable for a heavy infestation.

STRAWBERRY ROOT APHID (Aphis forbesi Teed.)

North Carolina

F. Sherman (March 31): Reported from the southeastern section of the State.

WHITE GRUBS (Phyllophaga spp.)

North Carolina

F. Sherman (March 31): Complained of in strawberry beds in grass lands and in tobacco seed-plant beds.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina

F. Sherman (March 31): We have a report of injury from our commercial strawberry section in the southeastern part of the State.

Missouri

Haseman & Wade (April 20): The strawberry weevil is reported destructive along the Missouri River.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

North Carolina

F. Sherman (March 31): We are receiving some pre-season inquiries regarding this pest in the western part of the State, which usually allude to serious damage last year, or in the years before.

Alabama

N. F. Howard (March 26): Epilachna corrupta has not yet been taken in the field. There has not been much variety in hibernation cages. Very few beetles have been collected in the woods in hibernation in this district. It is believed that the survival has been low. The beetles did not emerge last year until the third week in April, but will no doubt appear two weeks earlier this year.

Mississippi R. W. Harned (April 21): Inspector George E. Riley reports that on February 7 he found a Mexican bean beetle crawling on the ground in a garden at Corinth, Miss. This is the only report so far received in regard to this insect in Mississippi during 1925.

BEAN LEAF-BEETLE (Cerotoma trifurcata Foerst.)

Mississippi K. L. Cockerham (April 14): First adults noted at Biloxi and collected on above date; bean foliage showing feeding marks. Females were noted with distended abdomens, indicating that egg deposition would start early.

J. M. Langston (April 15): A number of beetles were observed on bean foliage during the middle of the day. They usually feed mornings and evenings.

R. W. Harned (April 22): The bean leaf-beetle seems to be abundant in many sections of the State at the present time. This insect is always a rather serious pest to beans in Mississippi early in the spring. This year they seem to be more abundant than usual.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Florida F. S. Chamberlin (April 20): At Quincy, garden peas were heavily infested with the aphid.

Louisiana C. E. Smith (April 20): Several severe infestations have been noted in the vicinity of Baton Rouge, during the spring.

California Roy E. Campbell (April 12): A heavy flight of aphids was observed about noon at Lick observatory on Mount Hamilton, at an elevation of 4,200 feet. It was sunny and warm, but there was no wind. The source of the aphids was not known, but probably was some leguminous plants in the mountains. Heavily infested pea fields were 25 miles away near San Jose, but in these the aphids were preponderantly wingless. (April 18): At San Jose, since January 1, the daily-mean temperature has averaged about 2° above normal, which favored a gradual increase in the aphid infestation. Damage became evident about the first of April, and gradually increased. Warm weather in the middle of April caused an early ripening of the crop, or the damage would have been much greater. It is possible that there will be a 25 per cent loss, possibly more.

CUCUMBERS

MELON APHID (Aphis gossypii Glov.)

Florida F. S. Chamberlin (April 3): Young cucumber plants under cloth shade are becoming infested with the melon aphid. Self-mixed nicotine dusts are being applied with good results in Gadsden County. No damage to the plants has resulted as yet.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

Mississippi M. M. High (March 28): The cucumber flea-beetle was found doing damage to young eggplant and cucumbers about Long Beach and Bay St. Louis.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Mississippi R. W. Harned (April 21): W. L. Gray, inspector with headquarters at Natchez, reports that lima beans, cucumbers, squash, and watermelons are being seriously injured in Adams County by the striped cucumber beetle. With the specimens of beetles and larvae that he collected on these plants, he sent the following memorandum: "The adult eats the stem near the ground. The larva eats or bores in the roots. The twelve-spotted beetles were also present."

Louisiana Chas. E. Smith (March 30): Infestation was on the place of R. L. Eugler, 7 miles east of town on the Greenville Springs Road. The crops attacked were growing adjacent to ground on which watermelons and cantaloupes were grown in the fall of 1924. This was the first infestation noted this spring, and it is earlier than usual for the species to occur.

DIABROTICA SP.

Mississippi R. W. Harned (April 21): Inspector J. E. McEvilly of McComb reports on April 17 that garden beans are severely injured in small gardens throughout McComb, by insects that Mr. J. M. Langston has determined as the larvae of some species of Diabrotica. It is hoped that we will be able to rear these insects for definite determination.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Alabama N. F. Howard (March 23): On this date this insect was very numerous on early cabbage and considerable damage was done to some plants. Injury to the field as a whole was not over 10 per cent. This form hibernates as an adult and is frequently taken in the woods when searches are made for Epilachna corrupta. (March 24): Diabrotica 12-punctata abundant on early cabbage about 12 miles distant from this field. Damage about the same.

RADISH

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Oregon Don C. Mote (April 11): At Salem adults were fairly numerous on above date. Caught a dozen flies in from 15 to 20 minutes. At Corvallis, on April 17, minute larvae observed entering radishes.



RADISH WEEVIL (Cleonus sparsus Lec.)

Oregon

B. G. Thomson (April 13): First adult observed on sidewalk at Corvallis on March 23. Adults numerous April 10.

HORSERADISH FLEA-BEETLE (Phyllotreta armoraciae Koch)

Illinois

W. P. Flint (April 23): Reported causing serious injury in southwestern Illinois on April 22.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Mississippi

M. M. High (March 28): The turnip louse was found abundant on turnip about Crystal Springs.

SPINACH

MELON APHID (Aphis gossypii Glov. and GREEN PEACH APHID Myzus persicae Sulz.)

California

T. D. Urbahns (April 20): At Sacramento these insects were abundant on spinach. Syrphid fly larvae are becoming so abundant that canneries are rejecting the spinach on account of these larvae. Many large fields are a total loss; others will be kept for growing seed.

# S O U T H E R N F I E L D - C R O P I N S E C T S

## COTTON

### BOLL WEEVIL (Anthonomus grandis Boh.)

#### GENERAL STATEMENT

Cooperative Report on Boll Weevil Emergence from Cage Tests Prior to April 1. (U. S. Bureau of Entomology, Delta Laboratory, Tallulah La.).

At a recent meeting of the State and Federal entomologists engaged in experimental work on the cotton boll weevil, a cooperative system was devised for the purpose of compiling and disseminating information on boll-weevil survival in hibernation. It was found that hibernation cage tests had been installed at eight different points ranging from Texas to North Carolina last fall and it was agreed by the investigator in charge of each of these series of experiments to report the emergence results on the 1st and 15th of each month during the emergence period to the Tallulah Laboratory of the U. S. Bureau of Entomology. At that point, the figures are compiled and analyzed with a view of determining as nearly as possible probable weevil infestation at the different points represented. The locations of these cooperative stations are as follows:

Baton Rouge, La. - Louisiana State Experiment Station,  
Dr. T. E. Hinds cooperating.

Tallulah, La. - U. S. Bureau of Entomology,  
Delta Laboratory.

Florence, S. C. - Joint Station, South Carolina State Experiment Station and U. S. Bureau of Entomology,  
Dr. F. A. Fenton cooperating.

Clemson College, S. C. - South Carolina State Experiment Station,  
Professor H. W. Earre cooperating.

Aberdeen, N. C. - North Carolina State Experiment Station,  
Professor Franklin Sherman cooperating.

Rocky Mount, N. C. - North Carolina State Experiment Station,  
Professor Franklin Sherman cooperating.

College Station, Tex. - Texas State Experiment Station,  
Dr. F. L. Thomas cooperating.

Holly Springs, Miss. - Mississippi State Experiment Station,  
Mr. C. T. Ames cooperating.

The records which have been received at the Delta Laboratory to date include observations up to the first of April and thus are of course of a decidedly preliminary nature and do not warrant as general conclusions as can be drawn from the later records. The most significant feature so far is the exceedingly high emergence at Florence, S. C. It happens that the same series of cages were installed at that point both last year and this year and it is especially interesting to compare the results. On the first of April, 1924, only 6 weevils had emerged from the entire series of cages whereas on the first of April, 1925, 349 weevils had emerged, or 58 times as many as in the preceding year. This verifies other observations to the general effect that a heavy initial emergence of weevils may be expected in the Southeastern States.

At the other points comparatively few weevils had emerged although some were reported from every station except the one at Holly Springs, Miss., and it is still too early to predict just what the results are likely to be.

GENERAL  
STATEMENT

Cooperative Report on Boll Weevil Emergence from Cage Tests Prior to April 16. (U. S. Bureau of Entomology, Delta Laboratory, Tallulah, La.).

Weevil emergence at the different cooperative points has continued to be much the same as indicated in the report of April 1. One additional cooperative station has been added since that time. This is the station at Experiment, Ga., of the Georgia Agricultural Experiment Station with Mr. R. P. Bledsoe cooperating.

The percentage of weevils placed in the cages last fall which had emerged prior to April 16 at the different points is shown in the following table:

Locality	Per cent of number put into cages which have emerged
College Station, Tex. . . . .	3.54
Baton Rouge, La. . . . .	2.69
Florence, S. C. . . . .	2.49
Clemson College, S. C. . . . .	1.78
Experiment, Ga. . . . .	.58
Aberdeen, W. C. . . . .	.37
Rocky Mount, W. C. . . . .	.14
Tallulah, La. . . . .	.01
Holly Springs, Miss. . . . .	0.00

The above figures are most interesting when compared with such earlier records as are available. In Texas, for instance, we have records at points near College Station for the years 1906, 1907, and 1908. The average total survival for those years was 5.2 per cent and the average survival which had emerged by April 15 for the same period was 4.6 per cent. It will be noted that in this year 3.54 per cent have emerged so far which would seem to indicate that the survival is at least approaching a normal one.

At Tallulah the nine-year average total survival is 1.51 per cent and about 25 per cent of the total emergence has been completed by April 15 in the average year. It will be noted that the survival this year is much below any such indication. This is difficult to explain except on the possibility that the weevils entering hibernation last fall were not sufficiently well fed to withstand the winter weather. Certainly, there was a tremendous shortage of squares for food for the weevils entering hibernation.

The Florence, S. C., record is probably more or less representative of the Southeastern States as a whole, and it is interesting to compare the records this season with those that were secured in an identical series of experiments last year. In the spring of 1924 there was a total emergence of 0.35 per cent and the emergence prior to April 16 was 0.11 per cent. This year, however, the emergence prior to April 16 is 2.49 per cent, thus continuing to indicate the high probable infestation in that territory.



It is also interesting to note the weevil emergence progressing at both North Carolina points, thus indicating that the weevils have been able to survive the winter in fair numbers even that far North.

North Carolina Franklin Sherman (March 31): Although 1924 witnessed very light injury in this State on an average, yet there was much rain at the very close of the season and weevils then seemed to develop in great numbers. We, therefore, believe that approximately a normal number entered hibernation. In our hibernation cages at Aberdeen two adults had come into the open by mid-March, but no more have been seen since.

Texas T. C. Barber (April 15): Initial boll-weevil infestation is rather heavy for the season, many people mentioning observing weevils in the cottonfields. Today the writer examined 600 lineal feet of cotton row in a 40-acre field 5 miles east of Brownsville and collected 20 weevils. Since the cotton rows were 4 feet apart, this indicated an average of more than 350 hibernated weevils per acre of cotton.

#### CUTWORMS (Noctuidae)

Mississippi R. W. Harned (April 22): On April 16 Inspector R. C. Price at Poplarville reported early cotton severely damaged by cutworms. In one experiment station plot four rows had to be replanted because of cutworm injury. He reports that an average of 10 per cent of the plants in the fields around Poplarville are being cut down by cutworms. This includes tomato, corn, and cotton.

Texas T. C. Barber (April 10): Considerable complaint of cutworm injury to young cotton seedlings is heard over the lower Rio Grande Valley section, in some cases the stand being injured so badly that replanting is necessary.

#### TOBACCO

#### GRASSHOPPERS (Acridiidae)

Florida F. S. Chamberlin (April 7): Large numbers of grasshoppers are hatching out in grass lands adjoining tobacco fields in Gadsden County. Control measures are most easily practiced at this time.

#### TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida F. S. Chamberlin (April 1): Newly set tobacco at Quincy is becoming infested with thrips.

TOBACCO BUDWORM (Heliothis virescens Fab.)

Florida F. S. Chamberlin (April 6): Eggs of the tobacco budworm were found at Quincy on April 6 for the first time this season. This insect usually appears somewhat earlier in this locality. There is no damage yet.

TOBACCO HORNWORM (Protoparce sexta Joh.)

Georgia F. S. Chamberlin (April 21): The first eggs and larvae of the tobacco hornworm observed this season were found in a field near Tifton.

TOBACCO FLEA-BEETLE ((Epitrix parvula Fab.)

Florida F. S. Chamberlin (April 10): Newly set tobacco is moderately infested with newly emerged flea-beetles in Gadsden County.

RICE

RICE STINK-BUG (Solubea rufoa Fab.)

Louisiana J. W. Ingram (April 18): The first rice stink-bugs of the season were observed feeding on grass near Crowley on the night of April 17. The majority of these hid themselves during the daytime, as a much smaller number was observed feeding on the following day than was feeding the night before.

SUGARCANE BEETLE (Eustheola rugiceps Lec.)

Louisiana J. W. Ingram (April 21): Sugarcane beetles have been found feeding on young rice in many fields in southwestern Louisiana. In some cases the stand of rice has been seriously reduced. Where the rice was of sufficient size to permit it, the beetle has been destroyed by flooding the fields.

SUGARCANE

SUGARCANE BEETLE (Eustheola rugiceps Lec.)

Louisiana J. W. Ingram (April 9): The growing points of a number of sugarcane plants were found dead in a field of cane on the station farm at Crowley. Upon investigation the damage was found to be caused by the sugarcane beetle, Ligyrus rugiceps.

# FOREST AND SHADE-TREE INSECTS

## MISCELLANEOUS FEEDERS

### GIPSY MOTH (Portheia dispar L.)

- New Hampshire P. R. Lorry (April 23): Egg masses are quite scarce in the locality of Durham.
- Massachusetts A. I. Bourne (April 25): Reports from the eastern end of the State indicate that the gipsy moth is much reduced in numbers.

### BROWN-TAIL MOTH (Enproctis chrysorrhoea L.)

- Massachusetts A. I. Bourne (April 25): Reports from the eastern end of the State indicate that the brown-tail moth is much reduced in numbers, although locally in certain sections it seems to be still abundant enough to threaten some injury if control measures are not put into practice.

### BAGTOR (Thyridopteryx ephemeraeformis Harr.)

- Indiana J. J. Davis (April 23): Many reports have been received from the southern third of the State. Most examples received occurred on cedars.

## CAMPHOR

### CAMPHOR SCALE (Pseudococcia duplex Coll.)

#### GENERAL STATEMENT

H. K. Plank (April 2): Careful search for this pest to date, especially on its host plants which were sent from New Orleans, La., and Alvin, Tex., during the past nine years, revealed the presence of the camphor scale in several Southern States, i. e., at Belfontaine (12 miles south of Mobile), Grand Bay, Irvington, and Shoreacres (5 miles south of Mobile) in Alabama; at Biloxi, Hattiesburg, Jackson, and Boss Christian in Mississippi; at Destrehan, Franklin, Gentilly, Hammond, Jennings, Penner, Lake Charles, New Orleans, Rayville, St. Rose, and Taggaman in Louisiana; and at Alvin, Arcadia, and Houston in Texas. Following prompt eradication measures by the Mississippi State Plant Board, no camphor scales have since been found in that State. Although it is still to be found in the other three States, its abundance, particularly in Alabama and Louisiana, was somewhat affected by the freeze of January, 1924, when the thermometer went to from 10° to 19° F. on at least one occasion.

The camphor scale seems to have recovered, however, from this slight setback, especially where there was little or no freezing of its hosts, and has apparently survived the past winter (1924-1925) with very little loss, the lowest temperature recorded at New Orleans having been 31° F. on December 31, whereas in this locality about 51 per cent of the adult female scales were found dead from all causes during about six weeks (January 28 to February 28, 1924) following the freeze of January, 1924, the total



mortality during about the same period this year (January 6 to February 13, 1925) is placed at approximately 17 per cent of the 5,168 adult female scales examined. These periods are reckoned 16 days after the lowest temperature of each winter was recorded, since it took this length of time for the scales to react sufficiently to the cold to afford accurate identification as to the cause of mortality. The percentage of dead adult female scales from all causes during the four weeks before the freeze of 1924 was about 28; the dead this winter for the same period was about 15 per cent of the 3,970 adult female scales examined. The lower percentages of mortality during the past winter appear to be due to lack of freezing weather and to the absence of natural enemies, as comparatively few scales have been noticed killed by natural causes, parasites, and predators in New Orleans during the winter 1924-1925.

Therefore the camphor scale in New Orleans, the region of heaviest known infestation, starts the year in what may be said to be nearly, if not quite normal abundance. The increase during the coming season bids fair to be reasonably great, especially when viewed in the light of the fact that the season here is about two weeks earlier than last year. This might also be said of southern Alabama since weather conditions there are nearly the same.

Eradicative measures, in which 2 per cent lubricating-oil emulsion (standard Government formula) was to be used, were started in southern Alabama last winter, where a successful clean-up in some Satsuma orchards was secured with this material in 1922. Spraying of the camphor trees in the parks and along the streets of New Orleans by the Parking Commission, carried out with much success in 1924, is being followed this year as a general policy. Pruning and spraying of infested plants in Houston, Tex., under the direction of the Chief Nursery Inspector of the Department of Agriculture of that State was started in 1924 with a view to eradication in that locality. Injury by this pest is, therefore, expected only locally, especially on private property where proper treatment can not or is not given the plants infested.

#### FIR

AN APHID (Chermes piceae Ratz.)

Maine

E. H. Patch (April 23): Heavy infestation on trunks of old fir balsams (Abies balsamea) on a place at South China.

#### ELM

ELM LEAF-BEETLE (Galerucella xanthomelaena Schr.)

Virginia

Monthly Letter, Bureau of Entomology, No. 131 (March): William Middleton, of this office, recently visited the Taylor estate near Trevilians, taking down a number of cages of elm leaf-beetles parasitized to a considerable extent by the dipterous Erynnia nitida R. D., received from Dr. T. R. Thompson, of Hyeres, France. With this material it is proposed to establish the parasite Erynnia nitida in this country.

California

T. D. Urbahns (March 30): Under date of March 21 A. C. Fleury reported adult beetles as being active on the tree trunks at Fresno. None were seen feeding.

Weekly News Letter, State of California Department of Agriculture, Vol. 7, No. 8 (April 18): Unfortunately a serious elm pest, the European elm leaf-beetle has become established in this State with its center of infestation at Fresno. It was first reported in June of last year. This beetle has been in the far eastern States many years, but never nearer to California than northern Oregon. Just how it was carried to California is not known. These beetles attack the elms, but as far as is now known they do not destroy other shade trees.

The natural spread of these beetles is very rapid. They are active in flight and alight upon people, automobiles, and other objects. The full-grown larvae or grubs crawl down the tree trunks or fall from the trees. Both beetles and grubs alighting on automobiles parked under elms may be carried long distances. By the end of the year light infestations were found on elm trees in other towns of the San Joaquin Valley, including Malaga, Selma, Kingsburg, Croisi, Sultana, Dinuba, Reedley, Sanger, Sunnyside, Clovis, and Visalia.

In the Eastern States two generations of beetles usually develop in one season. At Fresno apparently four generations developed last year which resulted in the very rapid increase of the beetles. Our long growing season and the successive generations extend the period of attack on elms over about seven months. Control measures therefore, are much more difficult than under northern climatic conditions.

MAPLE

GLOOMY SCALE (Chrysomchalus tenebricosus Comst.)

Mississippi

R. W. Harned (April 22): Inspector R. B. Deen, under date of April 21, reports that maple trees are being severely attacked by the gloomy scale in Tupelo. He says, "They seem to be more numerous than usual."

OAK

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche')

Mississippi

R. W. Harned (April 21): The European lecanium is appearing in great numbers at various places throughout the State, especially on oak trees. Specimens received from Aberdeen, Tylertown, and Purvis on water oak; specimens received from Laurel and Hattiesburg on live oak, and specimens received from Fayette on cherry and Chinese Incense Apple have been identified by Prof. Pettit and Miss McDaniel, of the Michigan Agricultural College, as Lecanium corni.

PINE

PINE BARK LOUSE (Chermes pinicorticis Fitch)

Indiana J. J. Davis (April 23): Received April 19 from Spiceland where it was reported as abundant on pine.

POPLAR

COTTONWOOD TENT CATERPILLAR (Malacosoma californica Pack.)

Arizona Arizona News Letter Vol. 3, No. 3 (March 31): The cottonwood-tree tent caterpillar was observed to be extremely numerous during the early part of March in certain sections of the Salt River Valley. Native cottonwoods near the bed of the Salt River were completely defoliated as was also a territory approximately three miles south of Phoenix. Probably the most abundant outbreak of the caterpillar was near the Phoenix Indian School where practically all of the cottonwoods of the immediate vicinity were completely defoliated. A number of complaints were made to the office of the State Entomologist that the "worms" were entering dwellings and thus making themselves a nuisance. Several cases were observed where the foliage of rose bushes and fruit trees had been eaten by the caterpillars.

I N S E C T S A T T A C K I N G G R E E N H O U S E

A N D O R N A M E N T A L P L A N T S

MISCELLANEOUS FEEDERS

EUONYMIUS SCALE (Chionaspis euonymi Comst.)

North Carolina F. Sherman (March 31): The four complaints which we have received of this insect in the last three months are more than usual.

APHIDIDAE

Georgia Oliver I. Snapp (April 14): At Fort Valley aphids have been unusually abundant this spring, especially on ornamentals.

LEPIDOPTEROUS LARVA

Louisiana T. E. Holloway (April 15): A large lepidopterous larva has been reported as injuring lawns and golf greens in New Orleans. Dr. R. D. Rands, of the Bureau of Plant Industry, has just sent us specimens from Houma, La., where "large areas of pasture are being killed out and the townspeople are having trouble with it in their lawns." The larva tunnels through the soil. It is reported that it can be controlled with carbon-disulfide emulsion.



SOWBUGS

Louisiana T. E. Holloway (April 23): Sowbugs were found abundant at New Orleans in a flower garden. They were said to be injuring various ornamental plants.

IRIS

IRIS ROOT-BORER (Macronoctua onusta Grote)

Indiana H. F. Dietz (April 15): Eggs of the iris root-borer began hatching at Indianapolis April 14. This is fully a month ahead of the first hatching of eggs in 1924.

LILAC

ASH BORER (Podosesia fraxini Lugger)

North Carolina F. Sherman (March 31): One complaint, the correspondent reporting the loss of about a dozen fine lilac bushes in recent years from this cause.

NARCISSUS

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Pennsylvania C. A. Weigel (April 15): Under date of April 13, Mr. Doucette, in charge of our field station at Willow Grove, Pa., reports that a florist in the vicinity of Philadelphia has lost about 30,000 out of a total of 40,000 bulbs. It appears as if the organism responsible for the injury is the cyclamen mite, Tarsonemus pallidus Banks, or a closely related form. According to Mr. Doucette's statement these bulbs produce only one-third as many flowers as normal bulbs. Flowers produced were one-half to 1 inch less in diameter than normal flowers and the stems were 2 inches shorter than normal flowers. The bulbs were tulip and Narcissus bicolor.

ROSE

APHIDIDAE

Arizona Arizona News Letter, Vol. 3, No. 3 (March 31): Aphids or plantlice were reported, in a telephone message from a grower near Phoenix, as abundant on roses.

ROSE APHID (Macrosiphum rosae L.)

Texas O. G. Babcock (April 14): At Sonora this insect is attacking roses; not numerous except on a very few roses, winged forms just beginning to appear.

GREENHOUSE LEAF-TYER (Phlyctaenia rubigalis Guen.)

Maryland

E. N. Cory (April 15): Doing serious damage to violets at end of crop, so financial loss nil; transferring to sweet peas in same greenhouse at College.

I N S E C T S A F F E C T I N G M A N A N D D O M E S T I C A N I M A L

MAN

FLEAS (Siphonaptera)

Indiana

J. J. Davis (April 23): A correspondent from Greensburg on April 19 reports considerable trouble with hog fleas the past two summers. Last year numerous reports were received from various sections of the State, reporting trouble with fleas in hog houses.

Missouri

Haseman and Wade (April 20): Fleas attracting attention around farm buildings in the central part of the State where they are reported as beginning activity earlier than usual.

MOSQUITOES (Culicidae).

Mississippi

R. W. Harned (April 22): Mr. Troy Thompson reported that mosquitoes were very abundant at Lakeshore in Hancock County during the past week. He did not mention the species and did not send any specimens for determination.

HOUSE FLY (Musca domestica L.)

Texas

O. G. Babcock (April 16): Fly trappings showed the following per cent of flies caught to be the house fly.

<u>Month</u>	<u>Year</u>	<u>Per cent</u>
Nov. 11 . . . . .	1924. . . . .	6
Feb. 18 . . . . .	1925 . . . . .	0
Mar. 4 . . . . .	1925. . . . .	0
Mar. 12 . . . . .	1925. . . . .	0
Apr. 2 . . . . .	1925. . . . .	0
Apr. 7 . . . . .	1925. . . . .	0
Apr. 11 . . . . .	1925. . . . .	3
Apr. 16 . . . . .	1925. . . . .	Trace

The house fly is more numerous than trap records would indicate but in comparison to the large number of blow-flies present the total percentage would indicate the house fly as being less numerous than it really is. House-fly bait not used.

SPOTTED FEVER TICK (Dermacentor venustus Banks)

Montana R. A. Cooley (March 27): The spotted-fever tick made its first appearance in the Bitter Root Valley very close to Feb. 15. The season has been unusually warm and favorable for the early appearance of ticks.

PUSS CATERPILLAR (Lagoa crispata Pack.)

North Carolina F. Sherman (March 31): The recent bulletin of the United States Department of Agriculture on this insect depicts it as having been epidemically serious in Texas for several years. It is of regular occurrence here and we receive an average of several reports per year, frequently complaining of "stings" by the larva. A cocoon was sent in for identification during February.

CATTLE

HORN FLY (Haematobia irritans L.)

Missouri Haseman & Wade (April 20): The horn fly on April 15 was quite abundant on livestock in the central part of the State.

Texas E. W. Laake (April 10): The horn fly is being held in check by the extreme dry weather this spring. The numbers vary from none to 50 per animal in dairy herds near Dallas. Some individuals are fighting considerably.

O. G. Babcock (April 16): Very few in numbers the last of March at Sonora, approximately 10 to 15 per animal. Today, April 16, barely averages one fly to the animal (cattle). None observed upon sheep.

D. C. Parman (April 21): Owing to the hot, dry weather at Uvalde it is rare to observe a single specimen of the horn fly unless observations are made in low, heavily timbered places, and in such places it is rare to see more than 10 to 15 flies on cattle.

SCREWORM (Chrysomya macellaria Fab.)

Texas E. W. Laake (April 13): The first adults of the screwworm were trapped at a local packing house on March 20. Trappings during the last week average 6 per cent of this species.

O. G. Babcock (April 16): Damage by this insect at Sonora is slight.

Feb. 18 . . . . . no specimens in trap  
Mar. 4 . . . . . no specimens in trap  
Mar. 12 . . . . . Trace of screwworms in trap  
Apr. 2 . . . . . No screwworm flies in trap  
Apr. 7 . . . . . 4 per cent screwworm flies in trap.  
Apr. 11 . . . . . 17 per cent screwworm flies in trap.  
Apr. 16 . . . . . 52 per cent screwworm flies in trap.



A few cases of screwworms in animals are appearing but as yet not numerous. The prospects, especially if it rains a little, are very promising for many screw-worm cases.

D. C. Farman (April 21): The adult has increased about 50 per cent during the month and an average of 90 per cent of the flies taken in traps at Uvalde are the screw-worm flies. A few cases of worms are appearing and the outbreak of heavy infestations probably depends upon weather conditions. The continued dry, hot weather will not allow development, but should rainfall be sufficient during the next month great numbers of flies would breed in the animals dying of poverty.

STABLE FLY (Stomoxys calcitrans L.)

Texas E. W. Laake (April 10): Several stable flies on dairy cattle, probably averaging 4 to 6 per head.

OX WARBLE (Hypoderma lineatum DeWitt.)

North Carolina F. Sherman (March 31): A county agent sent fragments of the adult fly on March 24, which seems to me early for the adult to be on the wing. However, this is the first actual specimen of the adult which we have had, though we received occasional inquiry about "wolves" in cattle.

Indiana J. J. Davis (April 23): The number of requests for methods of control of this insect indicates its general prevalence.

Texas E. W. Laake (April 10): Several dairy herds in the vicinity of Dallas were examined and found to be free from grubs in the back. (April 22): Adult activity which began early in February and reached its height about March 15 has now ceased entirely.

SHORT-NOSED CATTLE LOUSE (Haematopinus eurysternus Nitzsch)

New Hampshire P. R. Lorry (April 3): Cattle lice at Durham have not been common this year, the short-nosed cattle louse being the one usually present, though Linognathus vituli L. and Trichodectes scalaris Nitzsch have occasionally been found.

Nebraska L. H. Swenk (March): The short-nosed cattle louse was the subject of a report of serious infestation of two-year-old heifers on a stock farm in Fillmore County during this month.

COMMON BLUE SUCKING LOUSE (Linognathus vituli L.)

Texas O. G. Babcock (April 16): Present but not in excessive numbers this winter at Sonora. More common on calves.

SPINOSE EAR TICK (Ornithodoros megnini Duges)

Texas O. G. Babcock (April 16): Present in average numbers at Sonora in the ears of cows and calves. Pear stage and adults still present. Now averages 2 to 8 pear stages to the ear and in some cows 2 to 4 spiny stages to the ear.

CANYON HORSE-FLY (Tabanus rubescens Bellardi)

Texas D. C. Farron (April 31): The canyon horse-fly has begun to appear in the lower canyons at Uvalde, the first specimen having been observed on April 15. A few were probably present before that date, as probably as many as 10 adults were observed in the lower canyons during the afternoon.

SHEEP AND GOATS

SHEEP TICK (Malophagus ovinus L.)

New Hampshire P. R. Lorry (February 10): Quite common at Durham, appearing to be more numerous on two flocks examined than for the last two or three years.

Indiana H. F. Dietz (April 15): A heavy infestation of this insect on sheep near Indianapolis was reported on this date.

J. J. Davis (April 23): A correspondent from Martinsville on March 17, and one from Cloverdale on February 27, report trouble with sheep ticks.

Texas F. L. Thomas (April 11): Owner of sheep at Balmorhea, Reeves County, stated that he never had these until he received two sheep bought in Ohio.

BLACK BLOW-FLY (Phormia regina Meig.)

Texas O. G. Babcock (April 16): At Sonora woolworms in sheep wool not bad this year to date. A few cases are reported however. Flytrapping records show the following:

<u>Month</u>	<u>Year</u>	<u>Per cent</u>
Feb. 13 . . . . .	1925 . . . . .	77
Mar. 4 . . . . .	1925 . . . . .	70
Mar. 12 . . . . .	1925 . . . . .	75
Apr. 2 . . . . .	1925 . . . . .	43
Apr. 7 . . . . .	1925 . . . . .	61
Apr. 11 . . . . .	1925 . . . . .	71
Apr. 16 . . . . .	1925 . . . . .	42

FOOT LOUSE (Linoanathus pedalis Osborn)

Texas

O. G. Babcock (April 16): For the last five years no severe outbreak of the foot louse in western Texas has been observed. Present in very small numbers. Appears to be more numerous in the fall and winter months. Usually difficult to find.

HAIRY RED GOAT LOUSE (Trichodectes hernsi K. & N.)

Texas

O. G. Babcock (April 16): At Sonora this insect seemed to be more generally distributed in flocks this year in noticeable quantities than formerly. Probably from 5 to 10 per cent infestation on an average in undipped flocks. On the whole more dipping than usual has been carried on this winter.

COMMON GOAT LOUSE (Trichodectes climax Nitzsch)

Texas

O. G. Babcock (April 16): More numerous at Sonora this winter than usual in herds where dipping was not carried on. Fully 50 per cent of such goats were grossly infested. This resulted in a considerable loss in mohair.

SUCKING GOAT LOUSE (Linoanathus stenopsis Burm.)

Texas

O. G. Babcock (April 16): This louse has been lighter this winter than for the last five years at Sonora. Difficult to find in any herd examined. This is even true in herds where no dipping was carried on. In one herd in particular the lice would continue to die off, and decrease instead of increase in numbers.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Redi)

Texas

O. G. Babcock (April 16): Doing considerable damage to poultry at Sonora where the houses have not been properly treated for mites and "blue bugs."

E. W. Laake (April 20): Chicken mites are abundant and causing considerable injury where they are not being controlled.

FOOT TICK (Argas miniatus Koch)

Texas

O. G. Babcock (April 16): Owing to more interest taken in combating this severe poultry pest there have not been so many complaints this year at Sonora. It appears that this tick has not been as active as usual this winter.

CHICKEN HEAD LOUSE (Lipeurus heterogranhus Nitzsch)

Texas

D. C. Parman (April 21): The head louse has been present in practically all flocks examined at Uvalde. The infestations in the flocks are usually rather general and some hens have as many as 25 to 30 lice. This louse has probably been responsible for some of the losses in young chickens.



LARGE HEN LOUSE (Menopon biserialatum Fieget)

- New Hampshire P. R. Lorry (April 3): Chicken lice have not been common this spring at Durham, although this species has been found in small numbers in all flocks examined.
- Texas E. W. Laake (April 20): Chicken lice are abundant, particularly the body louse. Inquiries as to control methods are being received at this station almost daily.
- D. C. Parman (April 21): The body-lice infestations have been found quite generally in examining farm and ranch flocks at Uvalde, and some of the hens have been observed to have as many as 1,000 to 1,500 lice and many masses of eggs as big as a pencil.

STICKTIGHT FLEAS (Echidnophaga gallinacea Westw.)

- Mississippi R. W. Harned (April 22): Inspector R. C. Price of Poplarville reports on April 16 that three poultrymen at Poplarville have reported the sticktight flea among their chickens.
- Texas D. C. Parman (April 21): The sticktight flea has continued to increase rapidly during the month at Uvalde and appreciable loss has been had from deaths, especially in young stock. This condition prevails throughout southwestern Texas. The loss will probably be about \$1,000,000 in this territory during the month.

INSECTS INFESTING HOUSES AND PREMISES

TERMITES

- Maryland T. E. Snyder (April 14): There have recently been several cases in the vicinity of Chevy Chase, Md., where rather expensive buildings were purchased and within one or two years extensive repairs had to be made owing to damage by termites.
- On September 24, 1924, there was a large "swarm" or colonizing flight of the termite Reticulitermes virginicus Banks from the woodwork of the small insectary of the Truck Crops Division, in the rear of the main Entomology building. On October 7, 1924, another large swarm of winged adults emerged. On April 11, 1925, at about 1.30 p. m., a large swarm of R. virginicus emerged from the woodwork of two other buildings, one a greenhouse and the other occupied by the Division of Deciduous Fruit Insects. These buildings are about 50 feet apart and it is possible that only one colony of termites is involved; the insects travel through the ground; hence insulation of untreated woodwork from the ground is the only preventive. These buildings were built hastily and cheaply in times of stress. However, these cases should demonstrate the need of modification of city building regulations so as to prevent this damage and protect the householder. Often, after a large purchase price, one or two years later a family has to expend several hundred dollars in rebuilding foundations, due to improper construction and consequent infestation by termites.

A MITE (Tyroglyphus lintneri Osb.)

Alabama N. F. Howard (March 27): Early in March an unusual infestation of a mite determined by Dr. H. E. Ewing as Tyroglyphus lintneri Osb. was called to our attention. Myriads of the mites covered a new steel household refrigerator and the food-stuffs in it. Investigation indicates that the infestation originated in the insulating material. No damage was done by the mites except that they were so numerous that they became an annoyance and the ice box had to be removed from the dwelling.

BOXELDER PLANT-BUG (Leptocoris trivittatus Say)

Nebraska M. H. Srenk (March): Complaints of annoyance in houses by the boxelder bug continued to come in during the early part of March.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon Don C. Mote (March 21): At Portland and Albany adults and eggs are quite abundant.

TURKISH LEAD-CABLE BORER (Sinoxylon sexdentatum Oliv.)

Turkey Monthly Letter of the Bureau of Entomology No. 131 (March): The office of the Consulate General, Constantinople, Turkey, reports, on February 28, 1925, that the Turkish lead-cable borer (Sinoxylon sexdentatum Oliv.) during the last year caused breaks in service wires in and near Constantinople. The insects bore into any part of the cable, whether near the hangers or not, and polished surfaces as well as rough are attacked. "Bonita" suspension rings are of no avail. It has been necessary to repair cables seven to eight times in a run of 50 meters. The areas particularly affected are as follows in the order of density of fault:

- 1: Both shores of the Golden Horn.
- 2: The Asiatic shore of the Bosphorus for a distance of about 8 kilometers from Cartal to Bostandjik.
- 3: The European shore of the Bosphorus for a distance of about 10 kilometers from Ezbek north.
- 4: The North shore of the Marmora for a distance of 9 kilometers near Matrikeuy and San Stefano.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Texas E. W. Laake (April 23): This office has received about the usual number of calls for this time of the year in regard to Argentine ant infestations.

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